

**STATEMENT OF BASIS****Page 1 of 9**

BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

EXPEDITED REVIEW: Accepted on October 21, 2016**DATE APPLICATION RECEIVED:** October 21, 2016**FACILITY DESCRIPTION**

The Swiss Krono SC, LLC (Swiss Krono) facility in Barnwell, SC produces laminated flooring from medium-density fiberboard (MDF) purchased from third party vendors and coated paper produced on site. The facility currently operates three flooring lines, three lamination lines, and two paper treating lines. In addition, it operates a 12 million Btu/hr natural gas-fired thermal oil heater to supply the heat needed for the lamination pressing process and a 28.3 million BTU/hr natural gas fired heaters to dry the coating onto the paper. There is also a briquetting process that takes the dust collected by the baghouses that control the emissions from flooring lines and lamination lines and convert it into a biofuel. The dust collected is primarily sawdust which is compacted into briquettes so it can be sold as wood fuel.

PROJECT DESCRIPTION

Swiss Krono proposes to construct a medium density fiberboard (MDF) plant to produce the fiberboard in lieu of purchasing it from a third party vendor. The mill will produce medium density fiberboards from wood chips supplied to the mill from outside sources or chips produced by an onsite chip mill to be constructed as part of the project. In addition to the MDF plant, Swiss Krono also plans to construct a fourth flooring line similar to the three existing ones that can process additional laminated panels, cutting them to length and proper tongue in groove ends

The Swiss Krono facility is currently permitted as a Title V Major Source and a synthetic minor for PM, PM₁₀ and PM_{2.5} emissions under the South Carolina Department of Health and Environmental Control (SCDHEC) Prevention of Significant Deterioration (PSD) permitting program. The future facility wide potential emissions due to the proposed project exceed major source thresholds for NO_x, VOC and CO emissions and the facility elects to become a synthetic minor source (< 250 tons/yr, each) for these pollutants. While the facility does not exceed major source levels for SO₂, the facility has requested a synthetic minor limit for SO₂ emissions.

CHANGES SINCE LAST OP ISSUANCE

The following revisions have been issued for the facility.

RECORD OF REVISIONS		
Date	Type	Description of Change
1/6/16	AA	Transfer of Ownership from Kronotex USA Holdings, Inc. to Kronotex SC, LLC. Removed Part 1B through 1E. Condition 05.2 revised to change the SC Regulation 61-62.5, Standard No. 1 - Emissions from Fuel Burning Operations, Section III - Sulfur Dioxide Emissions, the maximum allowable discharge of sulfur dioxide (SO ₂) resulting from the fuel burning operations from 3.5 pounds per million BTU input to 2.3 pounds per million BTU input (each) consistent with regulatory changes effective June 27, 2014.
7/14/16	MM	(1) Incorporates the two new paper treating lines only from Construction Permit 0300-0031-CL; (2) Reflects the facility name change and new physical address; (3) Clarifies the PSD avoidance condition for PM, PM ₁₀ , and PM _{2.5} emissions; and (4) Updates the permit to the new, streamlined Title V format.
1/11/17	AA	Administrative Amendment to change the facility name to Swiss Krono SC, LLC and revise the physical address from 1251 Osborn Drive to 810 Technology Drive.



STATEMENT OF BASIS
Page 2 of 9
 BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

AA Administrative Amendment
 MM Minor Modification
 SM Significant Modification

SOURCE TEST REQUIREMENTS

Initial and Biennial PM source testing will be required per SC Regulation 61-62.5, Standards 1 and 3. An initial NO_x source test will be required to ensure the SNCRs are meeting the 30% reduction requirements of SC Regulation 61-62.5, Standard 5.2 for the dust burner and the grate burner. Initial PM source testing will be required for the dust burner in accordance with 40 CFR 60, Subpart Dc, and for the grate burner in accordance with 40 CFR 60, Subpart Db. Additional source testing will be required to ensure compliance with the applicable NESHAPs. To ensure the facility is in compliance with its synthetic minor limits, the following testing shall be required in accordance with SC Regulation 61-62.1, Section II(J)(2):

Synthetic Minor / PSD Avoidance Source Testing Requirements			
Stack ID	Pollutant(s)	Potential Controlled Emissions (ton/yr)	Frequency
EP 90.100 (dryer)	PM	62.29	Initial, Biennial
EP 90.100 (dryer)	PM ₁₀ , CO	81.67 171	Initial, Biennial with Reduction Provisions
EP 90.100 (dryer)	PM _{2.5}	38.85	Initial
EP 90.100 (dryer)	NO _x	223.5	Initial, Annual with Reduction Provisions
EP 90.100 (dryer)	VOCs	58.65	Initial, Biennial with Reduction Provisions
EP 90.120 (press)	PM	4.73	Initial, Biennial
EP 90.120 (press)	PM ₁₀ , CO	9.53 3.59	Initial, Biennial with Reduction Provisions
EP 90.120 (press)	PM _{2.5}	6.27	Initial
EP 90.120 (press)	NO _x	7.88	Initial, Annual with Reduction Provisions
EP 90.120 (press)	VOCs	44.15	Initial, Biennial with Reduction Provisions
Intermediate (between ESP and Dryer)	PM, PM ₁₀ PM _{2.5}	ESP performance verification	Initial
EP 90.140 (trim saw) or EP 90.210 (diagonal saw)	VOCs	35.65, each	Initial (specific saw to be determined once constructed)
EP 90.060 (No. 4 Flooring)	PM, PM ₁₀ , PM _{2.5}	13.5	Initial
EP 90.130 (sanding)	PM, PM ₁₀ , PM _{2.5}	15.46	Initial

SPECIAL CONDITIONS, MONITORING, LIMITS

At times, the facility must bypass a particular control device for equipment protection or employee safety. There is a by-pass gate downstream of the dry ESP with connecting duct to the RTO stack to allow for startup on natural gas.



STATEMENT OF BASIS

Page 3 of 9

BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

When bio-mass fuel feeding commences, this by-pass gate is closed, If there is an emergency in the grate burner (such as power failure or dangerous over pressure or heat), an emergency abort vent mounted directly over the grate combustion chamber opens automatically to protect nearby operators as well as the equipment. If this would occur, then through an interlock, the entire process is shutdown all the way through the board cooler which will take anywhere from 30 seconds to 2 minutes to complete. This is a standard safety design on all modern burners. If there is a wood fiber fire detected at the dryer outlet to the dryer twin cyclones or if extremely high dryer outlet temperatures is sensed, the Emergency Bypass from outlet of the Dryer Twin Cyclones to the RTO stack is opened. As above, this is a standard safety design on all modern dryers to protect nearby operators and prevent possible damage to the RTO equipment due to fire and to reduce risk of explosion. Through process interlocks, combustion units, dryer, refiner feed, and wood flow to the production units downstream is ceased. Operations downstream of the forming equipment will cease in 2 minutes or less. The Department has established conditions to ensure that the bypass events are recorded and emissions are estimated during those events.

The facility has requested parametric monitoring requirements for the SCNRs in lieu of a continuous emission monitoring system (CEMs). In order to ensure compliance with the NO_x limits, the facility will be required to develop and implement a continuous parameter monitoring plan for the SNCRs.

The controlled potential facility wide emissions of NO_x and VOCs have been estimated to be within 97% and 81% of their respective PSD avoidance limits of less than 250 TPY. The primary source of NO_x emissions are from the combustion operations in the energy center. The largest sources of VOC emissions are the drying, pressing and sawing operations. The current monitoring requirements are to establish a monitoring plan with parameters to be optimized during the initial source testing. While the estimated emissions are conservative, the Department will require CEMs to be installed if the facility wide emissions are within 90% of their respective PSD avoidance limits. This is consistent with other similar MDF facilities.

During normal operation, the facility is subject to the Plywood MACT and there are provisions in the regulation for SSM events. When the energy center bypasses the dryer, the combustion operations are subject to the Boiler MACT and there are no provisions in the Boiler MACT for SSM events. Additionally, our state regulations require the respective limits to be met at all times which would include SSM events. A condition was established for the facility to maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected source; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. Any emissions from these occurrences are required to be included in the facility wide total emissions.

In December 2008, the US Environmental Protection Agency (EPA) finalized a revision to the December 2002 New Source Review (NSR) Improvement rules to change the requirements of the major NSR programs regarding the treatment of fugitive emissions. This final rule required fugitive emissions to be included in determining whether a physical or operational change results in a major modification *only* for sources that have been designated through rulemaking under section 302(j) of the Clean Air Act (i.e. sources with a 100 TPY threshold). In March 2010, an interim 18 month stay of the 2008 rule was established which would then require *all* sources to include fugitive emissions in determining whether a physical or operational change results in a major modification. In March 2011, the 2010 stay was replaced with another interim stay. The existing facility is not a major NSR source as synthetic minor limits have been established. The rules and stays are for modifications to existing major NSR sources. Since this is facility is considered a minor source, the fugitive emissions do not need to be included when determining whether this



STATEMENT OF BASIS
Page 4 of 9
 BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

modification results in a major modification.

EMISSIONS

Emissions were reviewed and checked. CO emissions for the RTO on the dryer were omitted in the facility wide calculations and have been included here. Slight discrepancies were also found in the uncontrolled emissions PM₁₀, PM_{2.5}, CO and VOCs and have been corrected in the table, when provided emissions were less conservative.

FACILITY WIDE EMISSIONS*		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
PM	33161	163.3/<250
PM ₁₀	33290	187.5/<250
PM _{2.5}	4502	59.2/<250
SO ₂	21.8	21.8/<250
NO _x	458	242.1/<250
CO	374	190/<250
VOC	1342	203.6/<250
Lead	8.66E-05	8.66E-05
HAP (single greatest)	399.2	110.2
HAP (total)	646	170.3

* Includes exempt sources from this project.

OPERATING PERMIT STATUS

The facility is a Title V facility.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	The facility has the potential to emit > 250 tons/yr of PM, PM ₁₀ , PM _{2.5} , NO _x , VOC and CO emissions but has federally enforceable synthetic minor limits of < 250 tons/year, each, to avoid PSD. Although not a potentially major source of SO ₂ emissions, the facility has requested a synthetic minor limit for SO ₂ .
.Standard No. 1	The dust burner and grate burner are subject to the opacity, PM and SO ₂ requirements of this standard. Biennial testing is required per this standard. Please see table below.
Standard No. 3 (state only)	Two RTOs will be used to control PM, CO and VOCs from the exhaust streams. The RTOs are classified as industrial incinerators and are subject to a PM limit of 0.5 lb/MMBTU and 20% opacity. The regulation requires the units to be source tested for PM every two years.
Standard No. 4	The flooring line and the MDF process are subject to this regulation. Please see table below.
Standard No. 5	None of the processes, which are regulated by the regulation, apply.
Standard No. 5.2	The dust burner and grate burner are subject to this standard and is required to meet the 30% reduction requirement of this standard as well as tune ups and fuel



STATEMENT OF BASIS

Page 5 of 9

BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

Regulation	Comments/Periodic Monitoring Requirements
	certifications. An initial source test will be required to verify emission factors and to demonstrate the 30% reduction.
Standard No. 7	The facility has the potential to emit > 250 tons/yr of PM, PM10, PM2.5, NOx, VOC and CO emissions but has federally enforceable synthetic minor limits of <250 tons/year, each, to avoid PSD. Although not a potentially major source of SO ₂ emissions, the facility has requested a synthetic minor limit for SO ₂ .
61-62.6	The fugitive PM (Dust) emissions are controlled in a manner that should not produce undesirable levels of PM (Dust) emissions. Sources of fugitive PM emissions, material handling and truck/automobile traffic, will comply with this regulation by ensuring that fugitive emissions will be minimized to maximum extent possible.
40 CFR 60 and 61-62.60	<p>The facility is subject to the following regulations and shall comply with all applicable regulations.</p> <p>Subpart A, General Provisions, If any of the NSPS standards are found to be applicable then the general provisions of NSPS, Subpart A, is applicable unless specifically excluded by the source-specific NSPS. Subpart A requires initial notification and performance testing, record keeping, monitoring, provides reference methods, and mandates general control device requirements for all other subparts as applicable. Subpart A will be applicable since there are three NSPS's that are applicable.</p> <p>Subpart Db, Standards Of Performance For Industrial-Commercial-Institutional Steam Generating Units The grate burner is subject to Subpart Db and as such has a PM and opacity limit. The facility will be required to install a COMs and record fuel usage daily. The facility elects a federally enforceable annual capacity factor of less than 10% of natural gas to avoid a NO_x limit under this standard.</p> <p>Subpart Dc, Standards Of Performance For Small Industrial-Commercial-Institutional Steam Generating Units The dust burner is subject to Subpart Dc and as such has a PM limit and an opacity limit. A COMs is also required by the regulation. Monitoring of Monthly Fuel Usage is required.</p> <p>Subpart IIII The emergency generators are subject to Subpart IIII. The generator will be required to be certified to Tier 4 standards and will be limited to 100 hr/yr per year of maintenance and readiness testing.</p>
40 CFR 61 and 61-62.61	This process is not subject to any standards of this regulation.
40 CFR 63 and 61-62.63	The facility is a major source of HAPs. The facility is subject to the following regulations and shall comply with all applicable regulations.



STATEMENT OF BASIS

Page 6 of 9

BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

Regulation	Comments/Periodic Monitoring Requirements
	<p>Subpart A, General Provisions</p> <p>If any of the MACT standards are found to be applicable then the provisions of Part 63, NESHAP Subpart A, are applicable unless specifically excluded by the source-specific NESHAP. Subpart A requires initial notification and performance testing, recordkeeping, monitoring, provides reference methods, and mandates general control device requirements for all other subparts as applicable. Since the plant will now be a major source of HAPs and there are four MACT rules that are applicable.</p> <p>Subpart DDDD, National Emission Standards For Hazardous Air Pollutants: Plywood And Composite Wood Products</p> <p>This regulation considers emissions of HAP from green end, drying, forming, pressing, board cooling, and finishing operations. HAP emissions from onsite storage units containing raw materials used in the manufacture of plywood and/or composite wood products, onsite wastewater treatment operations associated with plywood and/or composite wood products manufacturing, and miscellaneous coating operations are also regulated under the this NESHAP. The proposed project is a MDF manufacturing plant and operates manufacturing equipment subject to the provisions of this regulation. The affected sources include the fiber dryer, the press, and the board cooler. Emissions from these units will be collected using specific design standards that ensure at least 95% collection and treat those exhaust gases such that at least 90% of the VOC, methanol, or formaldehyde be removed or reduced to a concentration of less than 20 ppm. The facility will be installing a RTO to control emissions from the dryer and a scrubber/RTO to treat the emissions from the press. The board cooler required emission levels will be met by venting them to the grate burner inlet air which is eventually also controlled by the dryer RTO. The enclosure for the press and board cooler will be designed to meet the standards listed in the rule. To address the issue concerning HAP's collected in the wastewater, the facility will submit a mitigation plan along with their notice of compliance after startup of the operation. The emission standards for this rule do not apply during start up, shutdown or malfunction events. The facility will be required to draft an SSM plan to minimize emissions during these events.</p> <p>Subpart JJJJ, National Emission Standards For Hazardous Air Pollutants: Paper And Other Web Coating</p> <p>The facility will be required to meet the emission standards for new sources in this rule. The rule has generally two compliance options. The first compliance option is to add a control device that removes 98% of the HAP's emitted from the affected units or the compliance option is to use HAP compliant coatings. HAP compliant coatings for new sources are coating that contain no more than 1.6% HAP or 8% of the mass of the solids being coated on the material. The facility currently uses a HAP compliant coating in its paper treating operation.</p>



STATEMENT OF BASIS

Page 7 of 9

BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

Regulation	Comments/Periodic Monitoring Requirements
	<p>Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) - The facility will install one emergency generator and therefore is subject to this subpart. The rule requires compliance with 40 CFR 60, Subpart IIII and limits non-emergency operation to less than 100 hours per year.</p> <p>Subpart DDDDD, National Emission Standards For Hazardous Air Pollutants For Major Sources: Industrial, Commercial, And Institutional Boilers And Process Heaters - The firing units are boilers because they supply heat to the thermal oil system. However all of the exhaust from the burners vent through the dryer which is an affected source under the Subpart DDDD MACT rule. Since the emissions from the dryer are regulated under that rule they are not subject to the emissions standards of Subpart DDDDD. However, upon start up the exhaust from the burners will be sent directly to the atmosphere so Subpart DDDDD would apply. The rule requires that start up occur using clean fuels (e.g. natural gas). Although the exhaust from the burners are not subject to the emission standards of this rule during normal operation, they are subject to the burner tune up requirements under the rule.</p>
61-62.68	The project does not store any listed substances above the permissible thresholds.
40 CFR 64	The facility is subject to CAM. Please see table below for sources and proposed parameter monitoring. The facility will be required to submit a CAM plan at the next Title V renewal.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This facility has demonstrated compliance through modeling; see modeling summary dated DATE.
Standard No. 8 (state only)	HAP/TAPs from sources burning virgin fuel are exempt from this standard.

SC Regulation 61-62.5, Standard No. 1

Unit ID	Opacity (%)	PM Allowable lb/10 ⁶ Btu (lb/hr)	SO ₂ Allowable lb/10 ⁶ Btu (lb/hr)	Uncontrolled Emissions (lb/hr)		Controlled/Limited Emissions (lb/hr)		Monitoring
				PM	SO ₂	PM	SO ₂	
E3-2a	20	0.6 lb/10 ⁶ Btu and 42.6 lb/hr @ 71*10 ⁶ Btu/hr	2.3 lb/10 ⁶ Btu and 163.3 lb/hr @ 71*10 ⁶ Btu/hr	28.4	1.78	5.18	1.78	PM: COMs & Source Test SO ₂ :Fuel Analysis
E3-2b	20	0.6 lb/10 ⁶ Btu and 74.4 lb/hr @ 124*10 ⁶ Btu/hr	2.3 lb/10 ⁶ Btu and 285.2 lb/hr @ 124*10 ⁶ Btu/hr	69.75	3.1	9.04	3.1	PM: COMs & Source Test SO ₂ :Fuel Analysis



STATEMENT OF BASIS
Page 8 of 9
 BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

SC Regulation 61-62.5, Standard No. 4

Unit ID	Opacity (%)	PM Allowable (lb/hr)	Process Weight Rate (tons/hr)	Uncontrolled PM Emissions (lb/hr)	Controlled PM Emissions (lb/hr)	Monitoring
E14	20	78.66	1086	308.0*	3.08	Visual Inspection & Recordkeeping
E1, E2, E3-1, E4, E5, E6, E7, E8, E9, E10, E11, E13, E15, E16	20	42.18	77.0	933.28	24.60	Visual Inspection & Recordkeeping

* The facility has assumed a 99% control efficiency and back calculated an uncontrolled emission level.

SC Regulation 61-62.5, Standard 5.2

Unit ID	NOx Allowable (lb/hr)	Uncontrolled NOx Emissions (lb/hr)	Controlled NOx Emissions (lb/hr)	Monitoring
E3-2a	39.31	55.52	27.76	Continuous Parameter Monitoring Annual Source Test
E3-2b	30.06	42.95	21.48	Continuous Parameter Monitoring Annual Source Test

40 CFR 64

Equipment Name	Equip. ID	Control Device ID	Pollutant	Control Device	Monitoring Parameter	Standard Requiring Control
Grate Burner	E3-2b	SNCR 100.001b	NOx	SNCR - Urea Injection	Urea injection rate (gpm)	Std. 5.2
	E3-2b	ESP 100.002	PM	ESP/RTO	COM on outlet of RTO	Std. 1
Dust Burner	E3-2a	SNCR 100.001a	NOx	SNCR - Urea Injection	Urea injection rate (gpm)	Std. 5.2
	E3-2a	ESP 100.002	PM	ESP/RTO	COM on outlet of RTO	Std. 1
Dryer RTO	E3-1	RTO Oxidizer RTO 100.001	PM/CO	RTO	Combustion Temperature (°C)	Std. 3 & 4, PSD avoidance
Forming Line Baghouse	E4	Baghouse BF 110.001	PM	Baghouse Filter	Pressure Drop (in water)	Std. 4
Fiber Reject System	E5	BF 150.001 Baghouse	PM	Baghouse Filter	Pressure Drop (in water)	Std. 4



STATEMENT OF BASIS
Page 9 of 9
BAQ Engineering Services Division

Company Name:	Swiss Krono SC, LLC	Permit Writer:	Fatina Ann Washburn Clark
Permit Number:	0300-0031-CM	Date:	DRAFT

40 CFR 64						
Equipment Name	Equip. ID	Control Device ID	Pollutant	Control Device	Monitoring Parameter	Standard Requiring Control
Board Sanding	E6	BF 130.001 Baghouse	PM	Baghouse Filter	Pressure Drop (in water)	Std. 4
Board Press	E11	Scrubber SC 120.001	PM	Scrubber	Scrubber Pressure Drop (in water) Pump Pressure (psig)	Std. 3 & 4
		RTO 120.002	PM	RTO	Combustion Temperature (°C)	Std. 3 & 4
No. 4 Flooring Line Baghouse	E14	BF 60.094 Baghouse	PM	Baghouse Filter	Pressure Drop (in water)	Std. 4
Chipper Cyclone	E1	Cyclone CY 200.001	PM	Cyclone	Daily maintenance checks	Std. 4

PUBLIC NOTICE

This construction permit(s) will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II.N. The comment period was open from March 1, 2017 to March 30, 2017 and was placed on the BAQ website during that time period.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.